



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,676	06/29/2001	Hyeon Ho Son	49128-5018	9570

9629 7590 03/22/2004

MORGAN LEWIS & BOCKIUS LLP  
1111 PENNSYLVANIA AVENUE NW  
WASHINGTON, DC 20004

EXAMINER

NGUYEN, JENNIFER T

ART UNIT PAPER NUMBER

2674

DATE MAILED: 03/22/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/893,676

Applicant(s)

SON ET AL.

Examiner

Jennifer T Nguyen

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Office action is responsive to amendment filed on 01/05/2004.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-7, 12-19, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Zavracky et al. (U.S. Patent No. 6,552,704).

Regarding claims 1, 13 and 16, referring to Figs. 12A-12C, Zavracky teaches a method of driving a liquid crystal display device (1112) during one display frame, comprising the steps of: applying one of a high level common voltage (Vcom high) and a low level common voltage (Vcom low) to a plurality of liquid crystal cells of the liquid crystal display device (1112) to write data into the liquid crystal cells within a time interval shorter than one display frame interval; applying a reference common voltage (Vcom) to the plurality of liquid crystal cells (Cpix); and turning on a backlight (1111) after said data writing to display an image (col. 10, lines 37-67, col. 11, lines 1-46, and col. 13, lines 23-49).

Regarding claims 2 and 15, referring to Fig. 12B, Zavracky further teaches after applying one of the high-level common voltage and the low-level common voltage, the liquid crystal cells to respond according to the data written between the time when the data is written and when the backlight (1111) is turned on (col. 11, lines 1-35).

Art Unit: 2674

Regarding claims 3 and 14, Zavracky teaches the reference common voltage (Vcom) lower than the high-level common voltage and greater than the low-level common voltage (Fig. 12C, col. 10, line 66 to col. 11, line 22).

Regarding claims 4 and 17, referring to Fig. 12B, Zavracky teaches re-aligning the liquid crystal cells after the step of turning on the backlight (col. 13, lines 23-49).

Regarding claims 5 and 18, Zavracky teaches at the step of re-aligning, one of the high-level common voltage or the low-level common voltage is applied (Fig. 12B).

Regarding claims 6 and 19, Zavracky teaches at the step of re-aligning, a common voltage having a polarity opposite to the common voltage applied when the data is written is applied (col. 13, lines 23-37).

Regarding claim 7, Zavracky teaches when data is being written, an effective voltage remaining in the liquid crystal cell is larger than a data voltage applied to the liquid crystal cell (col. 11, line 64 to col. 12, lines 8).

Regarding claims 12 and 24, Zavracky teaches the driving method is applied to twisted nematic mode liquid crystal display device (col. 13, lines 1-2).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2674

5. Claims 8-11 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zavracky et al. (U.S. Patent No. 6,552,704).

Regarding claims 8, 10, 20, and 22, Zavracky differs from claims 8, 10, 20, and 22 in that he does not specifically teach the high-level common voltage is equal to or more than +15V. Zavracky teaches the high-level common voltage is 8 volts (col. 10, lines 66-67). It would have been obvious to obtain the high-level common voltage is equal to or more than +15V in order to reduce the generation of a residual image and a flicker and to improve the quality picture image.

Regarding claims 9 and 21, Zavracky further teaches the high-level common voltage is equal to a gate high voltage applied to a gate electrode of a thin film in transistor of the liquid crystal cell (Figs. 12A and 12B, col. 10, lines 55-67, col. 11, lines 1-22).

Regarding claims 11 and 23, Zavracky further teaches the low-level common voltage is equal to a gate low voltage applied to a gate electrode of a thin film transistor in the liquid crystal cell (Figs. 12A and 12B, col. 10, lines 55-67, col. 11, lines 1-22).

### ***Response to Arguments***

5. Applicants' arguments filed 01/05/2004, have been fully considered but they are not persuasive because as follows:

In response to applicants' argument filed "Zavracky fails to teach or suggest during one display frame including the steps of applying one of a high-level common voltage and low-level common voltage to a plurality of liquid crystal cells and applying a reference common voltage to a plurality of liquid crystal cells". However, Zavracky teaches during one display frame (i.e., frame 1) including the steps of applying one of a high-level common voltage (i.e., Vcom high) and low-level common voltage (i.e., Vcom low) to a plurality of liquid crystal cells (i.e., Cpix)

Art Unit: 2674

and applying a reference common voltage (Vcom) to a plurality of liquid crystal cells (Figs. 12A-12C, col. 10, lines 37-67, col. 11, lines 1-46, and col. 13, lines 23-49). Moreover, it is well known in the art to apply a reference common voltage to a plurality of liquid crystal cells in the LCD.

Therefore, it is believed that the claim limitations are still met by Zavracky and the rejection is maintained.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jennifer T. Nguyen** whose telephone number is **703-305-3225**. The examiner can normally be reached on Mon-Fri from 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reach at **703-305-4709**.

Art Unit: 2674

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

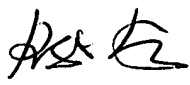
Washington, DC. 20231

**Or faxed to: 703-872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA, sixth-floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the Technology Center 2600 Customer Service Office whose telephone  
number is 703-306-0377.

Jennifer T. Nguyen  
03/16/2004

  
REGINA LIANG  
PRIMARY EXAMINER